Space Weather Forecast

Issued on Monday, 22 November 2021 at 00:46 Local

This forecast provides a four-day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

Space Weather Forecast Headline: No significant activity.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar activity was very low over the last 24 hours, with no significant X-ray flare activity observed. There are two sunspot-containing active regions on the facing side of the sun, both small, magnetically unipolar and stable.

No Earth-directed Coronal Mass Ejections (CMEs) have been observed in available imagery.

Solar Wind / Geomagnetic Activity: The solar wind remained characteristic of connection to a fast stream of solar wind. The solar wind speed was elevated to strong, rising to a peak in the middle of the reporting period, before reverting to earlier levels during the second half of the UTC day. Both the number of particles in the solar wind and their associated magnetic field were slightly elevated, but otherwise unremarkable.

The net result of the above solar wind measures was nevertheless provisionally quiet Kp indices, comfortably below Minor Storm G1 throughout.

Energetic Particles / Solar Radiation: No solar radiation storms were observed.

Four-Day Space Weather Forecast Summary

Solar Activity: Solar activity is expected to be very low, with only a daily 5% slight chance of common-class flares due to the two small and simple sunspots on the Earth-facing side of the sun.

Solar Wind / Geomagnetic Activity: There are no Earth-directed CMEs in the current forecast. Earth's current interaction with a stream of fast wind is expected to be the peak of activity for the period. This should fall to become mostly quiet by midweek, with a low confidence upturn ending the four days should a second, less potent stream of fast wind follow on. This final feature is not expected to result in Minor Storm G1.

Energetic Particles / Solar Radiation: No solar radiation storms are expected.

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Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	5	1	1	1
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	1	1	1	1
Very Active	R3 to R5 X	No	1	1	1	1

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	1	1	1	1
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

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